(19) World Intellectual Property Organization International Bureau



(43) International Publication Date 6 April 2006 (06.04.2006)

(10) International Publication Number **WO 2006/035973**

- (51) International Patent Classification: HOIL 51/50 (2006.01)
- (21) International Application Number:

PCT/JP2005/0 18243

(22) International Filing Date:

27 September 2005 (27.09.2005)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

2004-285777

30 September 2004 (30.09.2004)

- (71) Applicant (for all designated States except US): SEMI¬ CONDUCTOR ENERGY LABORATORY CO., LTD. [JP/JP]; 398, Hase, Atsugi-shi, Kanagawa 243-0036 (JP).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): KUMAKI, Daisuke. SEO, Satoshi [JP/JP]; c/o SEMICONDUCTOR ENERGY LABORATORY CO., LTD., 398, Hase, Atsugi-shi, Kanagawa, 2430036 (JP).

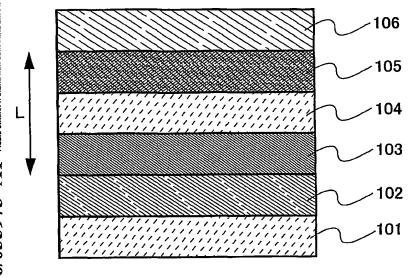
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: LIGHT-EMITTING ELEMENT AND LIGHT-EMITTING DEVICE



(57) Abstract: It is an object of the present invention to provide a light-emitting element having a layer containing a light-emitting material and a transparent conductive film between a pair of electrodes, in which electric erosion of the transparent conductive film and metal can be prevented, and also to provide a light-emitting device using the light-emitting element. According to one feature of the invention, a light-emitting element includes a first layer 102 containing a light-emitting material, a second layer 103 containing a material having a donor level, a third layer 104 including a transparent conductive film, and a fourth layer 105 containing a hole-transporting medium between a first electrode 101 and a second electrode 106, in which the first layer 102, the second layerl03, the third layer 104, the fourth layer 105, and the

second electrode 106 are provided sequentially, in which the second electrode 106 has a layer containing metal.

WO 2006/035973 A1